

AMENDMENTS TO THE CLAIMS:

Please amend the claims to read as indicated herein.

1. (Currently amended) A solid sorption heat pump (1), comprising
 - 1.1 ~~an adsorber/desorber unit (2) with~~having a heat exchanger (3) and a solid sorption material (4);
 - 1.2 ~~the adsorber/desorber unit (2) is arranged together with a condenser/evaporator unit (6) in;~~
a common housing (5) in which the adsorber/desorber unit and the condenser/evaporator unit are arranged together, wherein the common housing is sealed against the ambient environment, with, and
an adsorptive-permeable element for separating the adsorber/desorber unit (2) and the condenser/evaporator unit (6) being separated from one another by an adsorptive-permeable element (7), characterized by the following features:
 - 1.3 ~~wherein the adsorber/desorber unit (2) comprises~~includes a heat-conductive absorbent body (9) ~~which~~that is arranged in a heat-conductive connection with the heat exchanger (3);
 - 1.4 ~~wherein the absorbent body (9) receives the sorption material (4);~~
 - 1.5 ~~wherein the absorbent body (9) provides~~ stability to the adsorber/desorber unit (2) with its stability; and
 - 1.6 ~~wherein the inner space of the common housing (5) has an inner unit that is subjected to a negative pressure and the common housing (5) is arranged as a thin-walled sheet metal sheathing which is placed on the absorbent body (9) in such a way so that the collapsing forces as-produced by the negative pressure on a component selected from the group consisting of the absorbent body (9) and/or, the heat exchanger (3) and, the condenser/evaporator unit (6), and any combinations thereof, are carried off.~~
2. (Currently amended) A The solid sorption heat pump according to claim 1, ~~characterized in that~~wherein the condenser/evaporator unit (6) is arranged in the

common housing (5) beneath the adsorber/desorber unit (2).

3. (Currently amended) AThe solid sorption heat pump according to ~~one of the~~ claims 1 ~~or 2~~, characterized in that, wherein the adsorptive-permeable element (7) is ~~arranged as a vapour-permeable sponge, especially a ceramic sponge (8), which that~~ produces a predetermined distance between the adsorber/desorber unit (2) and the condenser/evaporator unit (6).

4. (Currently amended) AThe solid sorption heat pump according to ~~one of the~~ claims 1 to 3, characterized in that,

wherein the condenser/evaporator unit (6) ~~comprises a similar~~ includes an additional absorbent body (10) like the adsorber/desorber unit (2),

~~which body is arranged in such a way that it~~ wherein the additional absorbent body receives condensation/evaporation pipes (11) ~~through which is flowed through by~~ a heat transfer medium flows and, and

wherein the heat transfer medium is used for carrying ~~carries~~ off condensation heat, ~~and for supplying~~ supplies evaporation heat and ~~produces the~~ provides stability ~~of~~ to the condenser/evaporator unit.

5. (Currently amended) AThe solid sorption heat pump according to ~~one of the~~ claims 1 to 4, characterized in that, wherein the absorbent body (9, 10) ~~as arranged as~~ is selected from the group consisting of a lamellar construction or and a metal sponge.

6. (Currently amended) AThe solid sorption heat pump according to ~~one of the~~ claims 4 ~~or 5~~, characterized in that, wherein the common housing (5) is placed on the absorbent body (9, 10), the additional absorbent body, and especially on the sections of the heat exchanger (3) and the condensation/evaporation pipes (11) ~~in such a way so~~ that the collapsing forces produced by the negative pressure on a component selected from the group consisting of the absorbent body (9, 10) and/or, the heat exchanger (3) and, the condensation/evaporation pipes, (11) and any combinations thereof, are carried off.

7. (Currently amended) A The solid sorption heat pump according to ~~one of the~~ claims 4 to 6, characterized in that, wherein the heat exchanger (3) and the condensation/evaporation pipes (11) are each arranged ~~in form of~~ as at least one or several pipe loops, with wherein each pipe loop ~~comprising~~ has a plurality of horizontally arranged pipe sections (12) ~~which that~~ are joined with each other at their horizontal ends by baffles (13) ~~in a manner~~ so as to guide the heat transfer medium.

8. (Currently amended) A The solid sorption heat pump according to ~~the claims 6 and 7,~~ characterized in that, wherein the sheet metal sheathing is placed on the baffles from the outside ~~on the baffles (13).~~

9. (Currently amended) A The solid sorption heat pump according to ~~one of the~~ claims 1 to 8, characterized in that, wherein a component selected from the group consisting of the supporting body (9) ~~and/or,~~ the heat exchanger of the adsorber/desorber unit (2), and a combination thereof ~~is/are~~ is coated with the solid sorption material (4).

10. (Currently amended) A The solid sorption heat pump according to ~~one of the~~ claims 1 to 9, characterized in that, wherein the common housing (5) ~~is arranged as~~ is a two-shell housing whose intermediate space is filled between the shells of the two-shell housing with a pressure-force-transmitting, heat-insulating material, ~~especially a granulate bulk material (14), and that the~~ wherein an intermediate space between the shells is evacuated.

11. (Currently amended) A solid sorption heat pump (1), comprising:
 11.1 ~~an~~ adsorber/desorber unit (2) ~~with~~ having a heat exchanger (3) and a solid sorption material (4); and
 11.2 ~~a~~ condenser/evaporator unit (6), ~~with,~~
 11.3 ~~wherein~~ the adsorber/desorber unit (2) ~~comprising~~ includes a heat-conductive absorbent body (9) ~~which is arranged that is~~ is in a heat-conductive connection

with the heat exchanger (3);

~~11.4 wherein the absorbent body (9) receiving~~receives the sorption material (4);

~~11.5 wherein the absorbent body (9) providing~~provides stability to the
adsorber/desorber unit (2) ~~with its stability;~~

~~11.6 wherein the condenser/evaporator unit (6) comprising~~includes an additional
heat-conductive absorbent body (10) ~~which is arranged in such a way that that it that~~
receives condensation/evaporation pipes (11) which are flowed through by through
which a heat transfer medium flows and are used for, wherein the heat transfer medium
carrying carries off condensation heat, and for supplying supplies evaporation heat, and
~~providing provides stability to the condenser/evaporator unit (6) with its stability;~~

~~11.7 wherein the adsorber/desorber unit (2) being~~is arranged in a first housing
(5.1) sealed from the ambient environment and the condenser/evaporator unit (6) ~~being~~
is arranged in a second housing (5.2) sealed from the ambient environment,
~~with wherein the inner spaces of the first and second housings (5.1, 5.2) being~~are
subjected to a negative pressure and ~~being~~are joined with each other by means of at
least one vapour-conducting connection; and

~~11.8 wherein the first and second housings (5.1, 5.2) being configured as are~~
thin-walled sheet-metal sheathings ~~which that~~ are placed on the absorbent body (9,
10) ~~and the additional absorbent body in such a way so that the collapsing forces~~
produced by the negative pressure on a component selected from the group consisting
of the absorbent body (9, 10) and/or, the additional absorbent body, the heat exchanger
(3) ~~and the condensation/evaporation pipes (11), and any combinations thereof,~~ are
carried off.

12. (Currently amended) A The solid sorption heat pump according to claim 11,
~~characterized in that wherein the absorbent bodies (9, 10)~~body and the additional
absorbent body are configured as each selected from the group consisting of a lamellar
construction ~~or and~~ a metal sponge.

13. (Currently amended) A The solid sorption heat pump according to one of the
claims 11 or 12, characterized in that, wherein the heat exchanger (3) and the

condensation/evaporation pipes ~~(11)~~ are each arranged ~~in form of~~ as at least one or several pipe loops, ~~with~~ wherein each pipe loop ~~comprising~~ has a plurality of horizontally arranged pipe sections ~~(12)~~ ~~which~~ that are connected with each other at their horizontal ends by baffles ~~(13)~~ ~~so as to be conductive for~~ so as to guide the heat transfer medium.

14. (Currently amended) A The solid sorption heat pump according to claims ~~12~~ and 13, characterized in that wherein the sheet metal sheathings are placed on the baffles from the outside ~~on the baffles (13)~~.

15. (Currently amended) A The solid sorption heat pump according to ~~one of the~~ claims ~~12 to 14~~, characterized in that 11, wherein the supporting body ~~(9)~~ and/or the heat exchanger of the adsorber/desorber unit ~~(2)~~ is/are coated with the solid sorption material ~~(4)~~.

16. (Currently amended) A The solid sorption heat pump according to ~~one of the~~ claims ~~12 to 15~~, characterized in that 11, wherein the first and second housings ~~(5.1, 5.2)~~ ~~are configured as~~ are double-shell housings whose intermediate spaces between the shells of the double-shell housings are filled with a pressure-force-transmitting, heat-insulating material, ~~especially a granulate bulk material (14)~~, and that ~~the~~ wherein intermediate spaces between the shells are evacuated.

17. (Currently amended) A heating system, comprising:
17.1 ~~a heating circuit (20) which is flowed through by a heat transfer medium;~~
a heat transfer medium that flows through the heating circuit;
17.2 ~~a high-temperature source (21) which~~ that is connected to the heating circuit ~~(20)~~ for supplying heat to the heat transfer medium at a predetermined first temperature level;
17.3 ~~a low-temperature source (22) which~~ that is connected to the heating circuit ~~(20)~~ for supplying heat to the heat transfer medium at a predetermined second temperature level which ~~lies below~~ is lower than the first temperature level;
17.4 ~~a heating device (23) which~~ that is connected to the heating circuit ~~(20)~~ for

removing heat from the heat transfer medium to a predetermined third temperature level which lies between the first and second temperature levels;

~~47.5—a solid sorption heat pump (1)—according to one of the claims 1 to 16~~claim 1 which is connected to the heating circuit ~~(20)~~; and

~~47.6—at least one of a heating circuit distributor (24) and/or at least one heating circuit valves (25) which is/are connected to the heating circuit (20) for the selective~~selectively setting of the flow of the heat transfer medium through the heating circuit ~~(20)~~.

18. (Currently amended) ~~A~~The heating system according to claim 17, ~~characterized in that~~wherein the at least one of the heating circuit distributor ~~(24) and/or the at least one heating circuit valves (25)~~ is/are adjustable for three switching phases:

~~18.1—wherein the three switching phases are a first switching phase, namely the desorption phase, in which~~ for producing a first flow circulation of the heat transfer medium ~~is produced between the high-temperature source (21) and the adsorber/desorber unit (2) and a second flow circulation of the heat transfer medium between the condenser/evaporator unit (6) and the heating device (23);~~

~~18.2—a second switching phase, namely the adsorption phase, in which~~ for setting a first flow circulation of the heat transfer medium ~~is set between the heating device (23) and the adsorber/desorber unit (2) and a second flow circulation of the heat transfer medium between the low-temperature source (22) and the condenser/evaporator unit (6);~~ and

~~18.3—a third switching phase, namely the by-pass phase, in which~~ for setting a flow circulation of the heat transfer medium ~~is set between the high-temperature source (21) and the heating device (23).~~

19. (New) The solid sorption heat pump according to claim 3, wherein the vapour-permeable sponge is a ceramic sponge.

20. (New) The solid sorption heat pump according to claim 4, wherein the additional absorbent body is similar to the absorbent body of the adsorber/desorber unit.

21. (New) The solid sorption heat pump according to claim 10, wherein the pressure-force-transmitting, heat-insulating material is a granulate bulk material.

22. (New) The solid sorption heat pump according to claim 16, wherein the pressure-force-transmitting, heat-insulating material is a granulate bulk material.